WHAT IS CLAIMED IS:

1. A data communication apparatus, comprising:

a) transmission means for transmitting a predetermined packet to at least a destination, wherein said predetermined packet is transmitted at a predetermined transfer rate; and

b) discrimination means for discriminating a maximum transfer rate to said destination, according to a response to said predetermined packet.

2. A data communication apparatus according to claim 1, wherein said transmission means supports plural different transfer rates.

3. A data communication apparatus according to claim 1, wherein said transmission means transmits said predetermined packet at the maximum supported transfer rate.

4. A data communication apparatus according to claim 1, wherein said transmission means retransmit said predetermined packet at a transfer rate lower than said predetermined transfer rate, according to the presence or absence of the response to said predetermined packet.

5. A data communication apparatus according to

claim 1, wherein said transmission means transmits predetermined information data at said maximum transfer rate after discriminating the maximum transfer rate to said destination.

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     6.   A data communication apparatus according to claim 5, wherein said transmission means divides said predetermined information data into one or more segment data, to generate one or more data packets from each segment data, and transfers the data packet in succession.

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     7.   A data communication apparatus according to claim 6, wherein said transmission means executes asynchronous transfer of said plural data packets.

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     8.   A data communication apparatus according to claim 6, wherein said transmission means executes isochronous transfer of said plural data packets.

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     9.   A data communication apparatus according to claim 6, wherein said transmission means broadcasts said plural data packets.

25   10.   A data communication apparatus according to claim 6, wherein said transmission means is a digital interface based on the IEEE 1394 standard.

11. A data communication apparatus according to claim 1, wherein said transmission means has a function of automatically detecting a change in the connection configuration of a network.

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12. A data communication apparatus according to claim 1, wherein said transmission means interrupts the transmission of the predetermined information data after detecting a change in the connection

10 configuration of the network, and transmits said predetermined packet with the predetermined transfer rate prior to re-start of the transmission of said information data.

15 13. A data communication apparatus according to claim 1, wherein said discrimination means identifies said predetermined transfer rate as the maximum transfer rate, according to the presence or absence of the response from the destinations.

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14. A data communication apparatus according to claim 13, wherein said discrimination means identifies said predetermined transfer rate as the maximum transfer rate, in case all the responses from the

25 destinations can be received within a predetermined period.

15. A data communication apparatus according to claim 1, wherein said predetermined packet includes at least one of dummy data, a command inquiring the ability of said destination, ability of said source, a

5 channel number assigned to said information data, and a connection ID indicating the logical connection relationship between said source and said destination.

16. A data communication apparatus according to

10 claim 1, wherein said destination is connected to a bus-type network.

17. A data communication apparatus according to claim 5, wherein said predetermined information data

15 includes at least one of video data and audio data.

18. A data communication method, comprising the steps of:

a) transmitting a predetermined packet to at least

20 a destination, wherein said predetermined packet is transmitted at a predetermined transfer rate; and

b) discriminating a maximum transfer rate to said destination, according to a response to said predetermined packet.

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19. A data communication system, comprising:

a) at least a destination; and

b) a source including means for transmitting a
predetermined packet to said destination at a
predetermined transfer rate, and means for
discriminating a maximum transfer rate to said

5 destination, according to a response to said
predetermined packet.

20. A computer readable storing medium storing a
program, said program comprising the steps of:

10 a) transmitting a predetermined packet to at least
a destination, wherein said predetermined packet is
transmitted at a predetermined transfer rate, and
b) discriminating a maximum transfer rate between
source and at least a destination, according to a

15 response to said predetermined packet.

21. A data communication apparatus, comprising:
a) transmission means for transmitting a
predetermined packet to at least a destination at a

20 first transfer rate; and
b) reception means for receiving a response to
said predetermined packet from each of destinations;
wherein said transmission means determines whether
or not to transmit said predetermined packet at a

25 second transfer rate lower than said first transfer
rate, according to the response from the destination.

22. A data communication apparatus according to claim 21, wherein said transmission means and said reception means support plural different transfer rates.

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23. A data communication apparatus according to claim 21, wherein said first transfer rate is the maximum transfer rate supported by said transmission means.

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24. A data communication apparatus according to claim 21, wherein said transmission means identifies said predetermined transfer rate as the maximum transfer rate to the destinations in case all the responses from the destinations can be received within a predetermined period.

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25. A data communication apparatus according to claim 21, wherein said transmission means retransmit said predetermined packet at said second transfer rate in case all the responses from the destinations cannot be received within a predetermined period.

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26. A data communication apparatus according to claim 21, wherein said transmission means automatically detects a change in the connection configuration of a network.

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27. A data communication method, comprising steps of:

a) transmitting a predetermined packet to at least a destination at a first transfer rate;

5   b) receiving a response to said predetermined packet from the destination; and

c) determining whether or not to transmit said predetermined packet at a second transfer rate lower than said first transfer rate, according to the

10   response from each of destinations.

28. A data communication system, comprising:

a) at least a destination; and

b) a source including transmission means for

15   transmitting a predetermined packet to said destination at a first transfer rate, and reception means for receiving a response to said predetermined packet from each of destinations wherein said source determines whether or not to transmit said predetermined packet at

20   a second transfer rate lower than said first transfer rate, according to the response from each of destinations.

29. A computer readable storing medium storing a

25   program, said program comprising steps of:

a) transmitting a predetermined packet to at least a destination at a first transfer rate;

b) receiving a response to said predetermined packet from each of destinations; and

c) determining whether or not to transmit said predetermined packet at a second transfer rate lower

5 than said first transfer rate, according to the response from each of destinations.